

## **ECTOLACHESILLA: A NEW GENUS OF LACHESILLIDAE (INSECTA: PSOCOPTERA) FROM AMAZONAS, BRAZIL**

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**ABSTRACT:** *Ectolachesilla ariasi* n.g., n. sp., is described from a single female collected in the state of Amazonas, Brazil. It belongs in subfamily Lachesillinae, and presents a combination of characters that makes it quite distinct from the other genera in the subfamily. Wing venation is caeciliusid, gonapophyses have a sclerotized band anteriorly, and the subgenital plate has two short, setose, postero-lateral lobes. A key to the genera of Lachesillinae is provided. The female holotype will be deposited in the INPA Collection, Manaus, Amazonas, Brazil.

**KEY WORDS:** Psocoptera, Amazonas, Brazil, *Ectolachesilla*, new genus

Among the specimens of Psocoptera in the Collection of Invertebrates of the Instituto Nacional de Pesquisas da Amazônia (INPA, Manaus, Amazonas, Brazil), made available for study thanks to the kindness of Dr. José Albertino Rafael, researcher of that institution, I found a female specimen of a lachesillid (subfamily Lachesillinae, as diagnosed by García Aldrete (2006)) whose characters do not allow inclusion in any of the genera in the subfamily (*Hemicaecilius*, *Lachesilla* and *Nadleria*); this specimen presents wing venation and gonapophyses typical of *Lachesilla*, and a unique subgenital plate, unlike the subgenital plates in the genera of the subfamily, strongly reminiscent of the subgenital plate in species of *Ectopsocus*, in the neighboring family Ectopsocidae (Yoshizawa 2002); it hence constitutes an undescribed genus, and the purpose of this paper is to describe it and to provide a key to the genera in the subfamily.

The specimen was dissected in 80% ethyl alcohol, and the head, wings, legs and genitals were mounted on a slide in Canada Balsam; unfortunately, the epi-proct and paraprocts were almost lost in preparation due to the poor condition of the specimen, as it had dried out and did not reconstitute well in acetic acid and soap solutions. Measurements (in  $\mu\text{m}$ ) of parts on the slide were taken with a filar micrometer whose measuring unit is 1.36  $\mu\text{m}$  for wings and 0.53  $\mu\text{m}$  for other parts. Abbreviations of parts measured are as follows: FW: length of right forewing, HW: length of right hindwing, F, T, t1, t2: lengths of femur, tibia and tarsomeres 1 and 2 of hind leg, ctt1: number of ctenidobothria on t1, Mx4: length of fourth segment of right maxillary palp, IO: minimum distance between compound eyes, D: antero-posterior diameter of right compound eye, d: transverse diameter of right compound eye, PO: d/D. The female holotype will be deposited in the Collection of Invertebrates, INPA, Manaus, Amazonas, Brazil.

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## SYSTEMATIC ENTOMOLOGY

## Group Homilopsocidea

## Lachesillidae, Lachesillinae

*Ectolachesilla* NEW GENUS (FEMALE)

**Diagnosis.** Description. With five distal inner labral sensilla, a central placoid, flanked on each side by a trichoid and outer placoid. Vertex of head not impressed. Wing venation caeciliusid (forewing Rs two-branched, M three-branched, areola postica free), veins Rs and M of forewing fused for a distance; hindwing Rs two-branched, M single, Rs and M fused basally for a distance (Fig. 1). Lacinial tip bifid, outer cusp larger than the inner one (Fig. 2). Pretarsal claw with a preapical denticle, pulvillus slender, acuminate (Fig. 3). Subgenital plate with two postero-lateral short lobes, each bearing distally a field of three setae; a row of setae along border of the gap between the lobes (Fig. 6). Gonapophyses: only v3 present, slender, setose, with a strongly sclerotized band anteriorly on outer edge (Fig. 4).

Differential diagnosis. See key plus the following. Differing from *Hemicaecilius* in having a setal field on each lobe of subgenital plate and in having a row of setae along border of gap between lobes. Differing from *Nadleria* in having vertex of head not impressed, and in lacking setae on the forewing membrane.

Generotype: *Ectolachesilla ariasi* new species

*Ectolachesilla ariasi* NEW SPECIES (FEMALE)

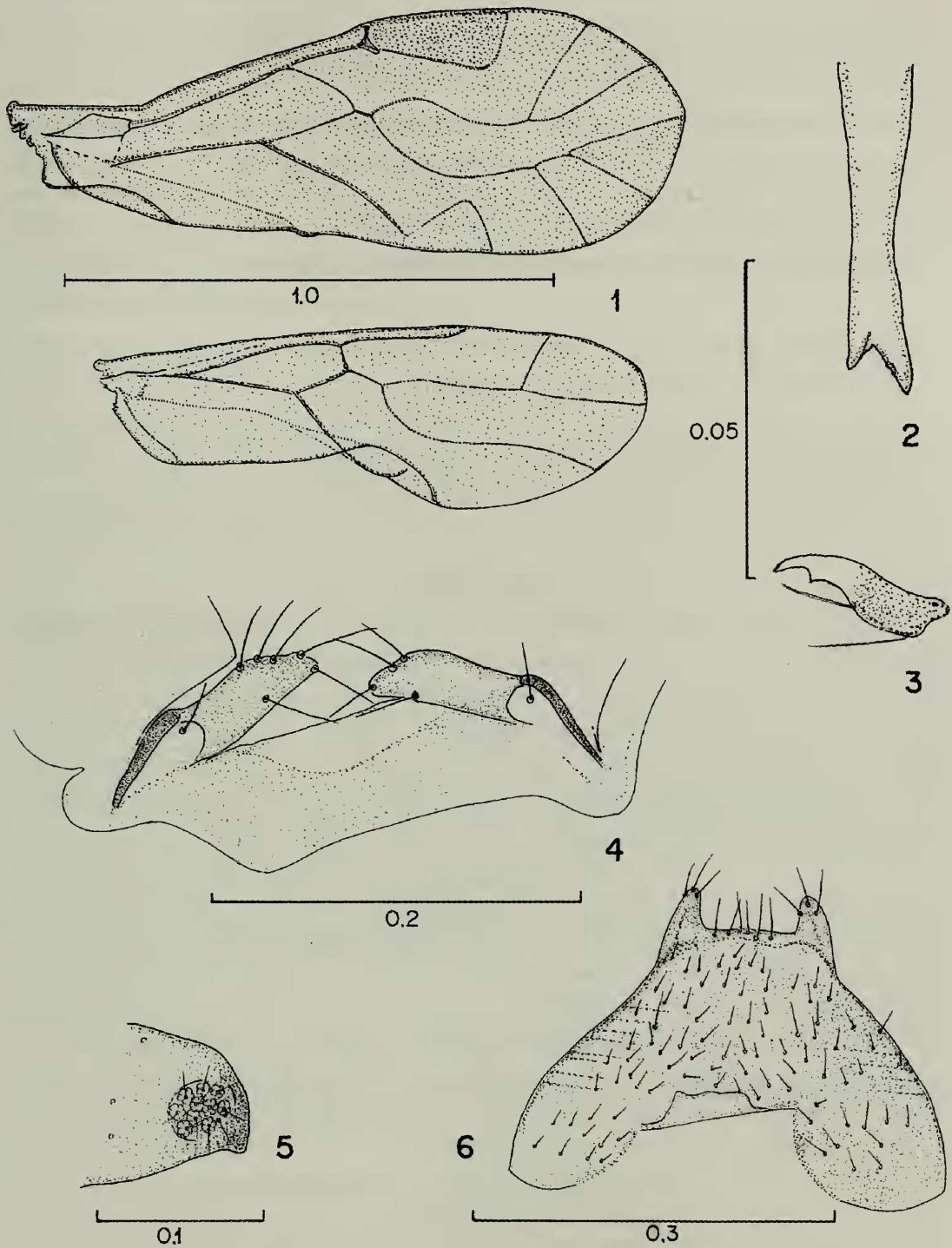
**Color** (in 80% alcohol). Body pale yellowish brown. Compound eyes black, ocelli hyaline, without pigmented centripetal crescents. Maxillary palps brown, antennae and legs pale brown, wings almost hyaline, with a pale orange hue, veins pale brown. Abdomen pale brown, with brown, transverse subcuticular rings, more pigmented dorsally.

**Morphology.** As described for the genus plus the following. Forewing pterostigma almost rectangular, wider distally, veins Rs and M fused for a distance, areola postica small, almost triangular (Fig. 1). Hindwing veins Rs and M fused basally for a distance (Fig. 1). Paraprocts with almost circular sensory field, bearing ten trichobothria issuing from basal rosettes and one marginal trichobothrium without basal rosette (Fig. 5).

**Measurements.** FW: 1413, HW: 1147, F: 303, T: 558, t1: 200, t2: 80, ctt1: 15, Mx4: 73, IO: 240, D: 154, d: 86, IO/D: 1.55, PO: 0.55

**Type Locality.** Brazil. Amazonas. Río Purus. 13-17.VIII.1983, CDC trap (Center for Disease Control, cf. McNelly 1989), 1m. Jorge Arias. Holotype ♀.

**Etymology.** The generic name is a composite word formed with the root 'ecto,' from *Ectopsocus*, and *Lachesilla*, in reference to the combination of characters of both genera presented by the new taxon. The specific name honors Dr. Jorge Arias, its collector.



Figures 1-6. *Ectolachesilla ariasi* n. sp. ♀. 1. Fore- and hind-wings. 2. Lacinial apex. 3. Pretarsal claw. 4. Gonapophyses. 5. Proximal half of right paraproct. 6. Subgenital plate. Scales in mm.

## KEY TO THE GENERA IN SUBFAMILY LACHESILLINAE

1. Veins Rs and M in forewing meeting in a point or fused for a distance .....2
- Veins Rs and M in forewing joined by a crossvein .....3
2. Female subgenital plate simple, without posterior projections; gonapophyses with or without a sclerotized band anteriorly on outer edge .....  
.....*Lachesilla* Westwood
- Female subgenital plate with a pair of rounded, setose lobes, projected posteriorly; gonapophyses with a strongly sclerotized band anteriorly on outer edge .....  
.....*Ectolachesilla* García Aldrete
3. Subgenital plate simple; vertex of head impressed; forewings with a large field of setae anteriorly on wing membrane.....  
.....*Nadleria* Badonnel and García Aldrete
- Subgenital plate with two slender, glabrous posterior projections; vertex of head impressed; forewings without a field of setae on wing membrane .....  
.....*Hemicaecilius* Enderlein

## DISCUSSION

To erect a new taxon of generic level on basis of a single female specimen presents risks, and I will try to justify such a decision in what follows. The specimen here dealt with presents a combination of characters that makes it different from the genera in the subfamily Lachesillinae; it has wing venation and gonapophyses typical of *Lachesilla*, but the subgenital plate, with postero-lateral, setose lobes are not seen in species of any of the 14 species groups recognized in the genus. The fact that *Lachesilla ariasi* García Aldrete (2004), was described from a male collected in the same CDC trap, the same date in the same locality as *Ectolachesilla ariasi*, opened the possibility of both taxons being conspecific; although there are some differences in forewing venation, definitive proof of distinctness was provided by a male-female association of *Lachesilla ariasi*, collected near Villa Tunari, Cochabamba, Bolivia, in April, 2005: the female has subgenital plate and gonapophyses typical of species in group Forcepeta of *Lachesilla*. A preliminary cladistic analysis of the genera of Lachesillinae, including also an undescribed genus from southern Mexico, and utilizing *Ectopsocus* as outgroup, indicates that *Ectolachesilla* is close to *Lachesilla*, and that *Nadleria* and *Hemicaecilius* are sister groups. *Ectolachesilla* shares with *Lachesilla* the wing venation, and the gonapophyses having a sclerotized anterior band; the genus is defined by a distinct autapomorphy: the *Ectopsocus*-like subgenital plate. The closeness of *Nadleria* and *Hemicaecilius* is supported by the following characters, shared by both genera: vertex impressed, forewing Rs-M joined by a crossvein, paraprocts with mesal prongs, epiproct with posterior projections—one in the latter, one or two in the former,—and similar structural plan of the male claspers: slender, short distal ends in *Nadleria*, and slender, very long distal ends in *Hemicaecilius* (the information for the latter comes from the only

known male of this genus, an undescribed species in my collection, from Cuzco, Peru). In addition, species of *Nadleria* have a field of setae on the forewing membrane, and the subgenital plate of *Hemicaecilius venezolanus* García Aldrete and Mockford (1997), has two slender, smooth postero-lateral projections, and the area between the projections is glabrous, unlike *E. ariasi* (compare Fig. 6 in this paper with Fig. 5 in García Aldrete and Mockford 1997). The above justifies the erection of *Ectolachesilla* as a new genus, close to *Lachesilla*. This genus, presently including more than 300 species in 14 species groups will probably have to be fragmented in the future, to create several genera, on the basis of some of the present species groups.

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